

Remarks

Applicants hereby add new claim 31. Accordingly, claims 1-16, 18-22, and 24-31 are pending in the present application. Support for the new claim may be found at least at page 4 line 29 through page 5 line 2 and Fig. 1A of the specification.

The Examiner has objected to claims 3, 13, 15, 26, and 30.

Claims 26 and 27 stand rejected under 35 USC §112, first paragraph, as failing to comply with the enablement requirement.

Claim 27 stands rejected under 35 USC §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-3, 5-9, 11, 13-15, 18-21, and 30 stand rejected under 35 USC §103(a) as being unpatentable over Japanese Patent application 2003-052161 (hereinafter "Okabayashi") in view of "Research Issues in Robot Safety" by James Graham (hereinafter "Graham").

Applicants respectfully request reconsideration of the objections and rejections.

Referring to the objection to claim 3, claim 3 has been amended and is believed to be allowable.

Referring to the objections to claims 13 and 26, these claims were unintentionally marked as "previously presented" in the office action response submitted on 30 June 2008, but have now been marked as "currently amended."

Referring to the objections to claims 15 and 30, the Examiner asserts that these claims, which both depend from claim 13, fail to further limit the subject matter of claim 13. Applicants respectfully disagree.

Claim 13 recites a computer/transceiver system on a surrogate for configuring the surrogate to loiter for a non-zero amount of time following the loss of wireless control. In contrast, claims 15 and 30 both recite that the surrogate system remains stationary for the non-zero amount of time.

As defined by the Random House Unabridged Dictionary, loiter means to "to linger aimlessly or as if aimless in or **about** a place." Thus, the term loiter is broad enough to include both remaining stationary in a location and lingering about the location. Accordingly, claims 15 and 30 which recite that the surrogate remains

stationary are narrower than claim 13 which recites that the surrogate loiters.

Applicants respectfully request withdrawal of the objections to claims 3, 13, 15, 26, and 30 for the above-mentioned compelling reasons.

Referring to the 35 USC §112 first paragraph enablement requirement rejection of claims 26 and 27, “the test of enablement is whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with information known in the art without undue experimentation.” *United States v. Telectronics, Inc.*, 857 F.2d 778, 785, 8 USPQ2d 1217, 1223 (Fed. Cir. 1988). The Examiner asserts that the enablement requirement is not met with respect to claim 26 because claim 26 recites the term “desired data rate,” but the term “desired data rate” is not defined in the specification.

Claim 26 recites determining that a current non-zero data rate at which a surrogate is successfully transmitting data via wireless communications is less than a desired data rate.

Lines 20-26 of page 6 of the originally filed application describe a bandwidth of a wireless LAN connection that can vary based on distance from an access point and signal path quality to the access point. Furthermore, this passage describes a surrogate that “needs a data rate greater than the minimum data rate for normal operation” and describes that the surrogate can detect when the surrogate moves into an area supporting only a data rate lower than the needed data rate but greater than or equal to the minimum data rate. The surrogate may detect this condition, for example, by detecting dropped packets or detecting rapidly increasing latency.

This passage of the specification provides one reasonably skilled in the art with the information necessary to make or use the invention of claim 26 without undue experimentation and therefore satisfies the enablement requirement. In particular, one reasonably skilled in the art could equate the needed rate described by the passage with the desired data rate recited by claim 26 and could configure a surrogate to determine that a current non-zero data rate (e.g., the “lower data rate” described in the passage) is less than the desired data rate (i.e., the needed rate described by the passage). This determination could be made, for example, by monitoring a number of dropped packets and/or monitoring latencies of packets relayed by the wireless LAN, both of which are described by the passage.

Claim 27 depends from claim 26 and refers to the “desired data rate” of

claim 26 by reciting "the desired rate." The Examiner asserts that the enablement requirement is not met with respect to claim 27 because claim 27 recites the term "desired rate," but the term "desired rate" is not defined in the specification. For the reasons described above in relation to claim 26, however, one reasonably skilled in the art would be able to make and use the invention without undue experimentation even though the term "desired rate" is not explicitly defined in the specification.

Applicants respectfully request withdrawal of the §112 first paragraph rejections of claims 26-27 for the above-mentioned compelling reasons.

Referring to the 35 USC §112 second paragraph rejection of claim 27, the Examiner argues that claim 27 is indefinite. Claim 27 recites wirelessly transmitting a video signal at or above a desired rate prior to detecting unsuitable degradation of wireless communications. The Examiner asserts that claim 27 is indefinite because it might not be possible to transmit a video signal at or above a desired rate prior to detecting unsuitable degradation if the wireless communications are unsuitably degraded when the surrogate is started.

35 U.S.C. §112, second paragraph, requires that claims particularly point out and distinctly claim the subject matter that the patent applicant regards as their invention. Applicants refer to MPEP §2173.02 (8th ed., rev. 6) which states the essential inquiry pertaining to a §112, second paragraph requirement is whether the claims set out and circumscribe a particular subject matter with a reasonable degree of clarity and particularity. Definiteness of claim language must be analyzed, not in a vacuum, but in light of:

- (A) the content of the particular application disclosure;
- (B) the teachings of the prior art; and
- (C) the claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made.

In reviewing a claim for compliance with 35 U.S.C. §112, second paragraph, the Examiner must consider the claim as a whole to determine whether the claim apprises one of ordinary skill in the art of its scope and, therefore, serves the notice function required by 35 U.S.C. §112, second paragraph by providing clear warning to others as to what constitutes infringement of the patent. MPEP §2173.02 (8th ed., rev. 6). A fundamental principle contained in 35 U.S.C. 112, second paragraph

is that applicants are their own lexicographers and they can define in the claims what they regard as their invention essentially in whatever terms they choose so long as any special meaning assigned to a term is clearly set forth in the specification. MPEP §2173.01 (8th ed., rev. 6).

Applicants submit that claim 27 is clear and definite on its face. In particular, it would be clear to one of skill in the art that the method of claim 27 includes wirelessly transmitting a video signal at or above a desired rate from a surrogate to a user prior to detecting unsuitable degradation of wireless communications. Moreover, one of ordinary skill in the art with the opportunity to consider and review the contents of the application disclosure pursuant to the above authority would clearly understand the language of claim 27.

The Examiner asserts that the surrogate may not be able to transmit a video signal at or above a desired rate prior to detecting unsuitable degradation of wireless communications in a situation in which wireless communications are degraded when the surrogate is started. Claim 27, however, does not recite limitations indicating that the surrogate has just been started or that the wireless communications are degraded prior to or simultaneous with the surrogate being started. Instead, claim 27 merely recites that the surrogate wirelessly transmits a video signal at or above a desired rate prior to detecting unsuitable degradation of wireless communications, which is understood by one of skill in the art and is definite.

Applicants assert that the Examiner conceiving of a situation in which the method of claim 27 might not be able to be performed does not render claim 27 indefinite since a person of skill in the art would understand from reading claim 27 that there is at least one situation in which the method of claim 27 may be performed.

Applicants respectfully request withdrawal of the §112 second paragraph rejection of claim 27 for the above-mentioned compelling reasons.

Referring to the 35 USC §103(a) rejection of claim 1, claim 1 recites moving a surrogate under wireless control by a user; during the moving, detecting unsuitable degradation of wireless communications of the wireless control; and in response to the detecting and while the surrogate is still receiving the wireless communications, autonomously moving the surrogate to provide suitable wireless

communications of the wireless control.

Okabayashi discloses a mobile robot operated remotely using wireless control communications. Paragraph 10 describes a situation in which the mobile robot travels to a first spot where the state of a radio wave gets worse. Paragraph 10 fails to teach that the robot receives any communications at the first spot. Furthermore, other portions of Okabayashi (specifically in the Abstract and paragraphs 5, 8, and 13) specifically teach the first spot as being one in which communication is impossible and in which an electric wave of the wireless control communications does not reach. Accordingly, the mobile robot must not be receiving wireless control communications in the first spot since radio waves of the wireless control communications do not reach the first spot. The mobile robot stops in the first spot.

Subsequently, the mobile robot autonomously returns to a second spot (also described as a front position) where radio waves of the wireless control communications do reach and reconnects to the wireless network while in the second spot. Okabayashi does not disclose autonomously moving a surrogate to provide suitable wireless communications while the surrogate is still receiving the wireless communications as recited by claim 1. Instead, Okabayashi's mobile robot begins autonomous movement after it reaches a spot in which radio waves of the wireless communications do not reach. Okabayashi is void of any teachings that the robot receives communications at the first spot.

Applicants respectfully submit that numerous positively-recited limitations of the claims are not disclosed or suggested by the teachings of Okabayashi and Graham and the §103(a) rejection is improper for this reason.

Applicants respectfully request withdrawal of the §103(a) rejection of claim 1 for the above-mentioned compelling reasons.

The claims that depend from claim 1 are in condition for allowance for the reasons discussed above with respect to the independent claim as well as for their own respective features, which are neither shown nor suggested by the cited art.

Referring to the 35 USC §103(a) rejection of claim 7, claim 7 recites in part autonomously moving a surrogate and while the surrogate is autonomously moving, activating a human perceptible indicator which is perceptible to humans in the presence of the surrogate.

The Examiner asserts that Graham discloses activating a human perceptible indicator while a surrogate is autonomously moving. Graham, however, merely discloses that “another important human factors area concerns how humans should be alerted to potentially dangerous situations involving robots” and that potential ways of alerting humans include warning signs, audible alarms, and flashing lights. Graham does not, however, disclose that an autonomously moving robot is potentially dangerous and does not disclose activating a human perceptible indicator while a robot is autonomously moving.

Applicants respectfully submit that numerous positively-recited limitations of the claims are not disclosed or suggested by the teachings of Okabayashi and Graham and the §103(a) rejection is improper for this reason.

Applicants respectfully request withdrawal of the §103(a) rejection of claim 7 for the above-mentioned compelling reasons.

The claims that depend from claim 7 are in condition for allowance for the reasons discussed above with respect to the independent claim as well as for their own respective features, which are neither shown nor suggested by the cited art.

Referring to the 35 USC §103(a) rejection of claim 13, claim 13 recites in part a computer/transceiver system on a surrogate for detecting loss of wireless control, configuring the surrogate to loiter for a non-zero amount of time following the loss of the wireless control and monitoring for return of the wireless control during the non-zero amount of time.

As was described above, Okabayashi discloses a mobile robot operated remotely using wireless control communications that is configured to stop if it reaches a first spot where radio waves of the wireless control communications do not reach. After the mobile robot has stopped, the mobile robot autonomously returns to a second spot where radio waves of the wireless control communications do reach. Okabayashi does not, however, disclose that the mobile robots loiters in the first spot for a non-zero amount of time during which it monitors for return of wireless control.

Applicants respectfully submit that numerous positively-recited limitations of the claims are not disclosed or suggested by the teachings of Okabayashi and Graham and the §103(a) rejection is improper for this reason.

Applicants respectfully request withdrawal of the §103(a) rejection of claim

13 for the above-mentioned compelling reasons.

The claims that depend from claim 13 are in condition for allowance for the reasons discussed above with respect to the independent claim as well as for their own respective features, which are neither shown nor suggested by the cited art.

Referring to the 35 USC §103(a) rejection of claim 19, claim 19 recites in part a surrogate movable under wireless control and a computer/transceiver system for autonomously moving the surrogate to an area not currently receiving adequate coverage of the wireless control, but in which the surrogate previously experienced adequate coverage of the wireless control to regain adequate coverage of the wireless control, and loitering in the area for the wireless control to return.

As was described above, Okabayashi discloses a mobile robot operated remotely using wireless control communications that is configured to stop if it reaches a first spot where radio waves of the wireless control communications do not reach. After the mobile robot has stopped, the mobile robot autonomously returns to a second spot where radio waves of the wireless control communications do reach. Okabayashi describes the second spot as a “possible point of wireless communications” because communication is possible at the second spot. It is clear from Okabayashi that radio waves of the wireless control communication are present at the second spot because Okabayashi discloses that the mobile robot reports that it is back in communication once it returns to the second spot.

In contrast, claim 19 recites a computer/transceiver system for autonomously moving a surrogate to an area not currently receiving adequate coverage of wireless control, but in which the surrogate previously experienced adequate coverage of the wireless control and loitering in the area for the wireless control to return.

Okabayashi does not disclose that its mobile robot is configured to autonomously move to an area not currently receiving adequate coverage of wireless control and loitering in the area. Instead, Okabayashi discloses a mobile robot configured to autonomously move to an area that is currently receiving adequate coverage of wireless control.

Applicants respectfully submit that numerous positively-recited limitations of the claims are not disclosed or suggested by the teachings of Okabayashi and Graham and the §103(a) rejection is improper for this reason.

Applicants respectfully request withdrawal of the §103(a) rejection of claim

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19 for the above-mentioned compelling reasons.

The claims that depend from claim 19 are in condition for allowance for the reasons discussed above with respect to the independent claim as well as for their own respective features, which are neither shown nor suggested by the cited art.

Applicants respectfully request allowance of all pending claims.

The Examiner is requested to telephone the undersigned if the Examiner believes such would facilitate prosecution of the present application. The undersigned is available for telephone consultation at any time during normal business hours (Pacific Time Zone).

Respectfully submitted,
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